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(54) **CONTINUOUSLY VARIABLE TRANSMISSION**

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(57) **ABSTRACT**

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A continuously variable transmission that comprises an input shaft to which torque may be applied, an adjustable gearing mechanism, and a driven element. The adjustable gearing mechanism is attached to the input shaft and is configured to continuously vary the drive ratio in response to the applied torque transmitted through the input shaft. The adjustable gearing mechanism includes a hub operatively connected to said input shaft, resilient arms, and an engaging portion. The resilient arms are attached to the hub. In one embodiment of a continuously variable transmission, the hub and the plurality of resilient arms are integrally formed so as to form a one-piece member. The resilient arms are configured to continuously adjust the outer diameter formed by the resilient arms. The engaging portion is integral with each of the resilient arms and is configured to cooperate with an endless member such as a chain. The driven element is operably connected to said gearing mechanism by the endless member. The gearing mechanism comprises material selected from a group consisting of plastic, composites, reinforced elastomers, and metals and alloys thereof. In a preferred embodiment, gearing mechanism comprises plastic. An alternate embodiment of the present invention is disclosed in which the arms are rotatably attached to said hub. This embodiment of a continuously variable transmission also includes linear springs configured to urge the arms to resist the torque exerted thereon.

26 Claims, 2 Drawing Sheets

